# MODULE IX(B) - SHORT TERM TEST INCINERATION

The purpose of this Module is to provide permit conditions for the operation of a new incineration unit prior to the long-term final operation period in order to:

1. Determine operational readiness following completion of physical construction;

2. Test compliance with the performance standards;

3. Determine adequate operating conditions to ensure that the performance standards will be maintained; and

4. Control operating conditions after the trial burn and prior to any final modifications of the operating conditions in the final operation portion of the permit to reflect the results of the trial burn.

## IX(B).A. SHAKEDOWN PERIOD

The shakedown period shall be the period beginning with the initial introduction of hazardous wastes into the incinerator following construction, and ending with the start of the trial burn as described under Condition IX(B).I. of this permit.

## IX(B).B. DURATION OF THE SHAKEDOWN PERIOD

The shakedown period will be effective for the minimum time required to bring the incinerator to a point of operational readiness to conduct a trial burn, up to 2,160 hours of operation when burning hazardous wastes.

## IX(B).C. LIMITATIONS ON WASTE FEED DURING SHAKEDOWN

IX(B).C.1. During the shakedown period, the Permittee may feed only the following wastes to the incinerator, subject to the requirements of this module:

D001 D002 D003 D004 D005 D006 D007 D008 D009 D010
D011 D012 D013 D014 D015 D016 D017 D018 D019 D020

D021 D022 D023 D024 D025 D026 D027 D028 D029 D030
D031 D032 D033 D034 D035 D036 D037 D038 D039 D040
D041 D042 D043

F001 F002 F003 F004 F005 F006 F024 F032 F034 F035
F037 F038 F039

K009 K010 K011 K013 K014 K015 K016 K017 K018 K019
K020 K021 K022 K023 K024 K025 K026 K028 K029 K030
K031 K032 K033 K034 K035 K036 K037 K038 K039 K040
K041 K042 K043 K048 K049 K050 K051 K052 K060 K083
K084 K085 K086 K087 K093 K094 K095 K096 K097 K098
K099 K101 K102 K103 K104 K105 K111 K112 K113 K114
K115 K116 K117 K118 K123 K124 K125 K126 K136 K141
K142 K143 K144 K145 K147 K148 K149 K150 K151

The Permittee may also feed to the incinerator non-hazardous waste including medical waste, industrial waste, household hazardous waste, site-generated waste, non-regulated PCB waste, and CERCLA waste with no accompanying EPA waste code.

The Permittee may also feed all P-listed and U-listed wastes with the exception of those having as a basis for listing, the (R) designation for reactivity.

The Permittee shall comply with all incinerator operating conditions established in this permit, when feeding wastes to the incinerator in addition to hazardous wastes defined by EPA Identification Number in this permit (e.g., medical waste, industrial waste, exempt hazardous waste, site generated non-hazardous waste).

IX(B).C.2. During the shakedown period, the following shall not be fed to the incinerator:

- Pyrophoric wastes/materials
- Radioactive wastes/materials
- Water reactive wastes/materials
- DOT Forbidden, Class A, and Class B explosives
- Shock sensitive wastes/materials
- RCRA hazardous waste Nos. F020 through F023, F026, F027.

IX(B).C.3. Total organic chlorine feed to the incinerator for all feed mechanisms combined shall not exceed 4850 pounds per hour.

IX(B).C.4. The Permittee shall limit the heat input rate of containerized waste to a maximum of 4.8 MMBTU per charge of container(s).

IX(B).C.5. The maximum thermal input to the incineration system (kilns and secondary chamber combined) for any combination of waste and/or fuel shall not exceed 200 x $10^6$ Btu per hour based upon a 60 minute rolling average.

IX(B).C.6. The feed rate of bulk solids to the primary kiln shall not exceed 42,000 lb/hr based upon a 60 minute rolling average for more than five minutes. Additionally, the feed rate of bulk solids to the primary kiln shall not exceed 50,000 lb/hr for more than 5 consecutive 1-minute averages. The 60 minute rolling average feed rate of bulk solids to the primary kiln shall be calculated in accordance with 40 CFR § 266.102(e)(6)(i)(B).

IX(B).C.7. The feed rate of energetic liquid wastes to the primary kiln through burner 991-BN-009 shall not exceed 3,000 lb/hr for more than five minutes or more than 3,150 lb/hr at any time.

IX(B).C.8. Reserved

IX(B).C.9. The feed rate of containers through the burner kiln ram feeder shall not exceed 7,200 lb/hr (except as allowed by Section 9 of the Trial Burn Plan, Attachment 17). The Permittee shall determine the time (in minutes) which must elapse before the next container may be fed by dividing the weight of the most recently fed container by 7200 pounds (or 10,000 pounds when operating under the conditions specified in Section 9 of the Trial Burn Plan, Attachment 17) and multiplying by 60 minutes. The Permittee shall not feed another container to the burner kiln until this time period has elapsed.

IX(B).C.10. The feed rate of bulk solids through the burner kiln auger feeder shall not exceed 12,000 lb/hr based upon a 60 minute rolling average for more than five minutes. Additionally, the feed rate of bulk solids through the burner kiln auger feeder shall not exceed 15,000 lb/hr for more than 5 consecutive 1-minute averages. The 60 minute rolling average feed rate of bulk solids through

the burner kiln auger feeder shall be calculated in accordance with 40 CFR § 266.102(e)(6)(i)(B).

IX(B).C.11. The feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall not exceed 8,000 lb/hr based upon a 60 minute rolling average for more than five minutes. Additionally, the feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall not exceed 10,000 lb/hr for more than 5 consecutive 1-minute averages. The 60 minute rolling average feed rate of sludge to the burner kiln through sludge lance 992-IN-004 shall be calculated in accordance with 40 CFR § 266.102 (e)(6)(i)(B).

IX(B).C.12. The feed rate of energetic liquid wastes to the burner kiln through burner 992-BN-010 shall not exceed 3,333 lb/hr for more than five minutes or more than 3,500 lb/hr at any time.

IX(B).C.13. The total feed rate of aqueous wastes to the burner kiln shall not exceed 23,000 lb/hr for more than five minutes or more than 24,000 lb/hr at any time. Additionally, the feed rate of aqueous wastes through any of the burner kiln aqueous wastes nozzles 992-IN-001, 992-IN-002, or 992-IN-003 shall not exceed 16 gpm at any time.

IX(B).C.14. The feed rate of gaseous waste to the burner kiln shall not exceed 400 lb/hr for more than five minutes or more than 420 lb/hr at any time.

IX(B).C.15. The feed rate of energetic liquid wastes to the secondary combustion chamber through the SCC burner 993-BN-003 shall not exceed 5,000 lb/hr for more than five minutes or more than 5,200 lb/hr at any time. The feed rate of energetic liquid wastes through the SCC burner 993-BN-004 shall not exceed 5,000 lb/hr for more than five minutes or more than 5,200 lb/hr at any time.

IX(B).C.16. The total feed rate of aqueous wastes to the secondary combustion chamber shall not exceed 14,285 lb/hr for more than five minutes or more than 15,000 lb/hr at any time. Additionally, the feed rate of aqueous wastes through any of the SCC aqueous wastes nozzles 993-IN-001, 993-IN-002, 993-IN-003, or 993-IN-004 shall not exceed 7.5 gpm at any time.

IX(B).C.17. The turndown ratio for each burner in the secondary combustion chamber shall not exceed 3.5 to 1 when operating with energetic liquid wastes. The turndown ratio for the burner in the burner kiln shall not exceed 5 to 1 when operating with energetic liquid wastes. The turndown ratio for the burner in the primary kiln shall not exceed 3.3 to 1 when operating with energetic liquid wastes.

IX(B).C.18. The viscosity of energetic liquid wastes as fed to the secondary combustion chamber shall not exceed 150 SSU. The viscosity of energetic liquid wastes as fed to the burner kiln shall not exceed 150 SSU. The viscosity of energetic liquid wastes as fed to the primary kiln shall not exceed 150 SSU.

IX(B).C.19. Atomizing fluid pressure to the energetic liquid wastes in the secondary combustion chamber burners shall be maintained above 70 psig. Atomizing fluid pressure to the energetic liquid wastes in the burner kiln burner shall be maintained above 50 psig. Atomizing fluid pressure to the energetic liquid wastes in the primary kiln burner shall be maintained above 65 psig.

IX(B).C.20. The Permittee shall comply with the following metals limitations.

IX(B).C.20.a. The Permittee shall control metal emissions from the stack such that the rate of emissions for each metal is no greater than the maximum allowable emission rate specified herein:

| Metal | Maximum Emission rate (lb/hr) |
|---|---|
| Antimony | 17.01 |
| Arsenic | 0.0448 |
| Barium | 300.00 |
| Beryllium | 0.0024 |
| Cadmium | 0.0787 |
| Chromium (VI) | 0.0189 |
| Lead | 5.10 |
| Mercury | 4.54 |
| Nickel | 300.00 |
| Selenium | 226.76 |
| Silver | 170.07 |
| Thallium | 17.01 |

IX(B).C.20.b. The Permittee shall not exceed the maximum metal feed rates to the incinerator as specified herein

(except as allowed by Section 8 of the Trial Burn Plan, Attachment 17).

| Metal | Maximum Feed rate (lb/hr) |
|---|---|
| Antimony | 17.01 |
| Arsenic | 16.81 |
| Barium | 300.00 |
| Beryllium | 1.42 |
| Cadmium | 2.81 |
| Chromium (total) | 22.68 |
| Lead | 90.0 |
| Mercury | 3.88 |
| Nickel | 300.00 |
| Selenium | 226.76 |
| Silver | 170.07 |
| Thallium | 17.01 |

The feed rates for arsenic, beryllium, cadmium, and chromium shall be calculated on a 24-hour rolling average basis as provided in 40 CFR § 266.102(e)(6)(ii). None of the one hour block average feed rates used in calculating the 24-hour rolling average for arsenic, beryllium, cadmium, and chromium shall, at any time, exceed ten times the allowable feed rate specified above. The feed rates for antimony, barium, lead, mercury, nickel, selenium, silver, and thallium shall be calculated on an hourly rolling average basis as provided in 40 CFR § 266.102(e)(6)(i)(B). Compliance with the metals feed limitations shall be demonstrated through waste analysis of the incinerator feed as required by Condition II.D.

IX(B).C.21. Wastes shall not be fed to the primary kiln unless the Permittee complies with the operating conditions specified under Condition IX(B).D.1 and IX(B).D.3. through IX(B).D.14. Wastes shall not be fed to the burner kiln unless the Permittee complies with the operating conditions specified under Conditions IX(B).D.2. through IX(B).D.14. Wastes shall not be fed to the secondary combustion chamber unless the Permittee complies with the operating conditions specified under Conditions IX(B).D.3. through IX(B).D.14.

IX(B).C.22. The Permittee shall not feed hazardous waste to the incinerator until such time that the Permittee has demonstrated compliance with the certification

of construction or modification requirement as specified in Condition I.R.

IX(B).C.23. Throughout operation, the Permittee shall conduct sufficient analysis of the waste feed, in accordance with the waste analysis requirements, Condition II.D., to verify that the waste fed to the incinerator is within the physical and chemical composition limits specified in this permit.

## IX(B).D. OPERATING REQUIREMENTS DURING SHAKEDOWN

During the shakedown period, the Permittee shall feed the wastes described in Condition IX(B).C.1. to the primary kiln, burner kiln, or secondary combustion chamber, only under the following conditions:

IX(B).D.1.a. The exit gas temperature from the primary kiln shall be maintained above 1100°F (except as allowed by Section 9 of the Trial Burn Plan, Attachment 17). This temperature is defined as the temperature reading from 991-TE-138A or 991-TE-138B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continously.

IX(B).D.1.b. The exit gas temperature from the primary kiln shall be maintained below 1500°F. This temperature is defined as the temperature reading from 991-TE-138A or 991-TE-138B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.

IX(B).D.2.a. The temperature of the exit gas from the burner kiln shall be maintained above 1400°F (except as allowed by Section 9 of the Trial Burn Plan, Attachment 17). This temperature is defined as the temperature reading from 992-TE-172A or 992-TE-172B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.

IX(B).D.2.b. The temperature of the exit gas from the burner kiln shall be maintained below 1750°F (except as allowed by Section 9 of the Trial Burn Plan, Attachment 17). This temperature is defined as the temperature reading from 992-TE-172A or 992-TE-172B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.

IX(B).D.3.a. The temperature of the exit gas from the secondary combustion chamber shall be maintained above 2012°F. This temperature is defined as the temperature reading from 993-TE-232A or 993-TE-232B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.

IX(B).D.3.b. The temperature of the exit gas from the secondary combustion chamber shall be maintained below 2325°F. This temperature is defined as the temperature reading from 993-TE-232A or 993-TE-232B if only one of the thermocouples is on-line, or the lowest temperature reading of the two thermocouples if both are on-line. This temperature shall be monitored and recorded continuously.

IX(B).D.4. Carbon monoxide (CO) concentration in the stack exhaust gas, corrected to seven percent (7%) oxygen in accordance with the formula specified in Condition IX(A).B.4., shall not exceed 100 ppmv, dry basis, over a one (1) hour rolling average and shall not exceed 500 ppmv, dry basis, for more than one minute at any time. The corrected CO concentration in the stack and the one (1) hour rolling average shall be monitored and recorded on a continuous basis.

IX(B).D.5. Combustion gas flowrate exiting the Wet Scrubber (998-FE-416) shall not exceed 110,000 acfm except as allowed by Condition IX(B).G.1.h. The combustion gas flowrate shall be monitored and recorded on a continuous basis.

IX(B).D.6. The Permittee shall control fugitive emissions from the combustion zones (primary kiln, burner

kiln, and secondary combustion chamber) of the incinerator by maintaining pressure in the combustion zones at values not to exceed -0.1 inches water column except as allowed by Conditions IX(B).G.1.hh. through jj. The differential pressure between each combustion zone and atmosphere shall be monitored and recorded on a continuous basis for the primary kiln, burner kiln, and secondary combustion chamber.

IX(B).D.7. The pH of the scrubber recirculating liquid shall be maintained above a pH of 3 (except as allowed by Section 9 of the Trial Burn Plan, Attachment 17). The pH shall be monitored and recorded continuously.

IX(B).D.8. The baghouse shall be operated with a minimum of seven compartments on-line. Additionally, no more than one of these seven compartments may be isolated as part of the cleaning cycle at any time. The baghouse shall be operated without a positive signal from any of the broken bag detectors except as allowed by Condition IX(B).G.1.ll. The detectors shall be operated continuously and their output recorded continuously.

IX(B).D.9. The Permittee shall maintain the stoichiometric ratio of calcium hydroxide or calium hydroxide and sodium hydroxide in the dry scrubber to the chlorine in the feed above 1.25, except as provided in IX(B).G.1.mm, and allowed by Section 9 of the Trial Burn Plan, Attachment 17. This ratio, as well as the lime slurry feed rate, the sodium hydroxide solution feed rate (if NaOH is used in the Dry Scrubber), and the lime slurry concentration shall be monitored and recorded continuously.

IX(B).D.10. The Permittee shall maintain the temperature of the combustion gas entering the dry scrubber below 750°F except as provided in Condition IX(B).G.1.nn. This temperature shall be monitored and recorded continuously.

IX(B).D.11. The Permittee shall maintain the temperature of the combustion gas entering the baghouse below 400°F. This temperature shall be monitored and recorded continuously.

IX(B).D.12. The Permittee shall maintain the wet scrubber recirculating liquor flow to scrubber SO-007 above 300 gpm except as provided by Condition IX(B).G.1.rr. The Permittee shall maintain the wet scrubber recirculating liquor flow to scrubber SO-020 above 300 gpm except as provided by Condition IX(B).G.1.ss. The liquor flow rate to each wet scrubber shall be monitored and recorded continuously.

IX(B).D.13. The Permittee shall maintain the temperature of the combustion gas exiting scrubber SO-007 below 180°F. The Permittee shall maintain the temperature of the combustion gas exiting scrubber SO-020 below 180°F. The temperature of the combustion gas exiting each wet scrubber shall be monitored and recorded continuously.

IX(B).D.14 The Permittee shall maintain the total dissolved solids in the recirculating liquor for the wet scrubbers below 10%. The total dissolved solids in the recirculating liquor for the wet scrubbers shall be monitored and recorded continuously.

IX(B).D.15. Compliance with the operating conditions specified in Conditions IX(B).D.1. through IX(B).D.14 will be regarded as compliance with the required performance standards in Condition IX(A).B. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards shall justify modification, revocation, or reissuance of the permit in accordance with Condition I.D. of this permit.

## IX(B).E. INSPECTION REQUIREMENTS DURING SHAKEDOWN

IX(B).E.1. On at least a daily basis, the Permittee shall thoroughly, visually inspect the incinerator and associated equipment (including pumps, valves, piping, conveyors, feed systems, etc.) for leaks, spills, fugitive emissions, deterioration, excessive wear, and signs of tampering.

IX(B).E.2. On at least a daily basis, the Permittee shall thoroughly, visually inspect the recorded data specified in IX(B).F.3. for completeness and for deviations from operational conditions specified in IX(B).F.3.

IX(B).E.3. The Permittee shall comply with Attachment 4.

## IX(B).F. MONITORING REQUIREMENTS DURING SHAKEDOWN

IX(B).F.1. The feed rate of pumpable or gaseous materials, including waste feed and auxiliary fuel, shall be monitored and recorded continuously. The feed rates shall be quantified in pounds per hour (lb/hr).

IX(B).F.2. The feed rate of non-pumpable wastes shall be monitored and recorded continuously or on a periodic basis equal to the charging cycle. The feed rates shall be quantified in pounds per hour.

IX(B).F.3. The Permittee shall maintain, calibrate, and operate the monitoring equipment used to obtain the data specified below and record the data specified below while incinerating hazardous waste:

| System Parameters | Instrument No. or DCS Tag No. | Units/Recording Process |
|---|---|---|
| 1. Reserved | | |
| 2. Primary Kiln Exit Gas Temperature | Thermocouple 991-TE-138A and/or B | °F, continuous |
| 3. Burner Kiln Exit Gas Temperature | Thermocouple 992-TE-172A and/or B | °F, continuous |
| 4. SCC Exit Gas Temperature | Thermocouple 993-TE-232A and/or B | °F, continuous |
| 5. Combustion Gas Flowrate | S-type Pitot Tube 998-FE-416 | ACFM, continuous |
| 6. Carbon Monoxide Continuous Emission Monitor | Extractive NDIR 998-AE-287 and/or 998-AE-1287 | ppm, continuous (0-200 ppm) |
| 7. Carbon Monoxide Continuous Emission Monitor | Extractive NDIR 998-AE-287A and/or 998-AE-1287A | ppm, continuous (0-3000 ppm) |
| 8. Stack Oxygen Continuous Emission Monitor | Paramagnetic 998-AE-290 and/or 998-AE-1290 | %, continuous |
| 9. Bulk Solids Feed Rate to Primary Kiln | Solids Feed Weighbelt 991-WE-669 | lb/hr, continuous |

| System Parameters | Instrument No. or DCS Tag No. | Units/Recording Process |
|---|---|---|
| 10. Energetic Liquid Wastes Feed Rate to Primary Kiln | Mass Flowmeter 991-FE-111 | lb/hr, continuous |
| 11. Reserved | | |
| 12. Reserved | | |
| 13. Bulk Solids (Auger) Feed Rate to Burner Kiln | Weight Accumulator 992-WIC-169B | lb/hr, continuous |
| 14. Bulk Solids Feed Rate to Burner Kiln Auger (from Unit 252) | Weigh Belt 992-WIC-169 | lb/hr, continuous |
| 15. Repackaged Solids Feed Rate to Burner Kiln Auger (from Skip Hoist) | Skip Hoist Scale 992-WI-716A | lb/hr, continuous |
| 16. Containers (RAM) Feed Rate to Burner Kiln | Roller Belt Scale 992-WI-705A | lb/hr, periodic basis equal to the charging cycle |
| 17. Sludge Feed Rate to Burner Kiln (from Tank Farm) | Mass Flowmeter 992-FE-149 | lb/hr, continuous |
| 18. Sludge Feed Rate to Burner Kiln (from Special Handling Bay) | Mass Flowmeter 992-FE-329 | lb/hr, continuous |
| 19. Energetic Liquid Wastes Rate to Burner Kiln (from Tank Farm) | Mass Flowmeter 992-FE-153 | lb/hr, continuous |
| 20. Energetic Liquid Wastes Rate to Burner Kiln (from Special Handling Bay) | Mass Flowmeter 992-FE-337 | lb/hr, continuous |
| 21. Total Aqueous Wastes Feed Rate to Burner Kiln (from Tank Farm) | Mass Flowmeter 992-FE-162 | lb/hr, continuous |
| 22. Total Aqueous Wastes Feed Rate to Burner Kiln (from Special Handling Bay) | Mass Flowmeter 992-FE-346 | lb/hr, continuous |
| 23. Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-001 | Volumetric Flowmeter 992-FE-347 | gpm, continuous |
| 24. Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-002 | Volumetric Flowmeter 992-FE-348 | gpm, continuous |
| 25. Aqueous Wastes Feed Rate to Burner Kiln Nozzle 992-IN-003 | Volumetric Flowmeter 992-FE-349 | gpm, continuous |
| 26. Energetic Liquid Wastes Feed Rate to SCC | Mass Flowmeters 993-FE-193 993-FE-203 | lb/hr, continuous |
| 27. Total Aqueous Wastes Feed Rate to SCC | Mass Flowmeter 993-FE-226 | lb/hr, continuous |

| System Parameters | Instrument No. or DCS Tag No. | Units/Recording Process |
|---|---|---|
| 28. Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-001 | Volumetric Flowmeter 993-FE-235 | gpm, continuous |
| 29. Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-002 | Volumetric Flowmeter 993-FE-236 | gpm, continuous |
| 30. Aqueous Wastes Feed Rate to SCC Nozzle 993-IN-003 | Volumetric Flowmeter 993-FE-237 | gpm, continuous |
| 31. Aqueous Feed Rate to SCC Nozzle 993-IN-004 | Volumetric Flowmeter 993-FE-238 | gpm, continuous |
| 32. Gaseous Waste Feed Rate to Burner Kiln | Volumetric Flowmeter (converted to mass flow rate) 538-FE-032 | lb/hr continuous |
| 33. Primary Kiln Pressure | Pressure Transmitter 991-PT-135 | Inches W.C., continuous |
| 34. Burner Kiln Pressure | Pressure Transmitter 992-PT-175 | Inches W.C., continuous |
| 35. SCC Pressure | Pressure Transmitter 993-PT-233 | Inches W.C., continuous |
| 36. Stoichiometric Ratio of hydroxide (calcium or calcium and sodium)to Chlorine | 000-AFI-114 | unitless, continuous |
| 37. Lime Slurry Feed Rate to Dry Scrubber | Volumetric Flowmeters 996-FE-512 996-FE-522 996-FE-532 | gpm, continuous |
| 37A. Sodium Hydroxide Solution Feed Rate to Dry Scrubber | Volumetric Flowmeter 996-FE-212 | gpm, continuous |
| 38. Reserved | | |
| 39. Dry Scrubber Inlet Gas Temperature | Thermocouple 996-TIR-291<br>Temperature Switch 996-TSHH-291 | °F, continuous<br>on/off, change in state |
| 40. Baghouse Inlet Gas Temperature | Thermocouple 996-TIC-501<br>Temperature Switch 996-TSHH-259 | °F, continuous<br>on/off, change in state |
| 41. Recirculating Liquor Flow Rate to Scrubber SO-007 | Flowmeter 998-FE-294 | gpm, continuous |
| 42. Recirculating Liquor Flow Rate to Scrubber SO-020 | Flowmeter 998-FE-443 | gpm, continuous |
| 43. Total Dissolved Solids in Recirculating Liquor for Wet Scrubbers | Conductivity Probe 998-AE-303 | %, continuous |

| System Parameters | Instrument No. or DCS Tag No. | Units/Recording Process |
|---|---|---|
| 44. pH of Scrubber Recirculating Liquor | pH Meter<br>998-AE-280 | pH, continuous |
| 45. Wet Scrubber SO-007 Gas Exit Temperature | Thermocouple<br>998-TE-903<br>Temperature Switch<br>998-TSHH-285 | °F, continuous<br><br>on/off, change in state |
| 46. Wet Scrubber SO-020 Gas Exit Temperature | Thermocouple<br>998-TE-904<br>Temperature Switch<br>998-TSHH-518 | °F, continuous<br><br>on/off, change in state |
| 47. Broken Bag Detectors | Analyzer Probes<br>997-AAH-261<br>997-AAH-262<br>997-AAH-263<br>997-AAH-264<br>997-AAH-265<br>997-AAH-266<br>997-AAH-267<br>997-AAH-268 | on/off, change in state |
| 48. Atomizing Fluid Pressure (Primary Kiln Energetic Liquid Wastes) | Pressure Switch<br>991-PSL-568 | on/off, change in state |
| 49. Atomizing Fluid Pressure (Burner Kiln Energetic Liquid Wastes) | Pressure Switch<br>992-PSL-592 | on/off, change in state |
| 50. Atomizing Fluid Pressure (SCC Energetic Liquid Wastes) | Pressure Switch<br>993-PSL-629 and<br>993-PSL-630 | on/off, change in state |
| 51. Status of I.D. Fan | Electrical Contact<br>998-EL-573 | on/off, change in state |
| 52. Loss of Primary Kiln, Burner Kiln, or SCC Burner Flame | Flame Detectors<br>991-BAL-134<br>992-BAL-177<br>993-BAL-222<br>993-BAL-224 | on/off, change in state |
| 53. Status of Thermal Vent | Limit Switch<br>993-ZSC-574 | on/off, change in state |
| 54. Lime Slurry Density | Density Meter<br>996-AE-110 | NA (Spec. Gravity -- no units), continuous |

IX(B).F.4. Upon written request of the Executive Secretary, the Permittee shall perform sampling and analysis of the waste and exhaust emissions (performance test) to verify that the operating requirements established in the permit achieve the performance standards. This performance test shall be performed no later than two (2) years after the

date Module IX(A) is modified to reflect the initial trial burn results, or two years after the date the Executive Secretary accepts the data from the prior performance test. The performance test required by this condition is not for the purpose of establishing new permit limits. The Permittee must follow the modification procedures in Condition I.D.5. for establishing new limits. However, the Permittee may combine a performance test with the required trial burn to establish new limits provided the appropriate modification procedures are followed.

IX(B).F.5. The Permittee shall comply with Condition IX(A).F.5.

IX(B).F.6. The Permittee shall comply with Condition IX(A).F.6.

## IX(B).G. WASTE FEED CUT-OFF REQUIREMENTS DURING SHAKEDOWN

IX(B).G.1. The Permittee shall construct and maintain the systems specified below to automatically cut off the hazardous waste feed to the incinerator at the levels specified below. Hazardous wastes shall be fed to the incinerator only when all instruments required by this condition are on line and operating properly.

Operating parameters which deviate beyond allowable limits specified below for the secondary combustion chamber, the air pollution control equipment, or other parameters monitored downstream from the kilns will require automatic cutoff of waste feed to all combustion chambers. Operating parameters which deviate beyond allowable limits specified below for a single kiln (e.g., kiln temperature, pressure) require automatic cutoff of all waste feed to the specific kiln. Waste feed rates which deviate beyond allowable limits specified below will require automatic waste feed cutoff of waste to the specific waste feed mechanism.

| PARAMETER | IMMEDIATE CUTOFF LIMIT | DELAYED CUTOFF LIMIT | DELAY PERIOD |
|---|---|---|---|
| a. Low primary kiln exit gas temperature | 1100°F[1] | N/A | N/A |

| PARAMETER | IMMEDIATE CUTOFF LIMIT | DELAYED CUTOFF LIMIT | DELAY PERIOD |
|---|---|---|---|
| b. Reserved | | | |
| c. High primary kiln exit gas temperature | 1500°F | N/A | N/A |
| d. Low burner kiln exit gas temperature | 1400°F[2] | N/A | N/A |
| e. High burner kiln exit gas temperature | 1750°F[3] | N/A | N/A |
| f. Low SCC exit gas temperature | 2012°F | N/A | N/A |
| g. High SCC exit gas temperature | 2325°F | N/A | N/A |
| h. High combustion gas flowrate | N/A | 110,000 acfm | 30 seconds |
| i. High carbon monoxide concentration | 100 ppm (60 minute rolling average) | 500 ppm | 60 seconds |
| j. High bulk solids feed rate to primary kiln | N/A | 42,000 lb/hr (60 minute rolling average) | 5 minutes |
| | | 50,000 lb/hr | 5 consecutive 1-minute averages |
| k. High energetic liquid wastes feed rate to primary kiln | 3,150 lb/hr | 3,000 lb/hr | 5 minutes |
| l. Reserved | | | |
| m. Reserved | | | |
| n. High containerized (RAM) waste feed rate to burner kiln | 7,200 lb/hr[4] | N/A | N/A |

| PARAMETER | IMMEDIATE CUTOFF LIMIT | DELAYED CUTOFF LIMIT | DELAY PERIOD |
|---|---|---|---|
| o. High bulk solids (AUGER) feed rate to burner kiln | N/A | 12,000 lb/hr (60 minute rolling average) | 5 minutes |
| | | 15,000 lb/hr | 5 consecutive 1-minute averages |
| p. High pumpable sludge feed rate to burner kiln | N/A | 8,000 lb/hr (60 minute rolling average) | 5 minutes |
| | | 10,000 lb/hr | 5 consecutive 1-minute averages |
| q. High energetic liquid wastes feed rate to burner kiln | 3,500 lb/hr | 3,333 lb/hr | 5 minutes |
| r. High total aqueous wastes feed rate to burner kiln | 24,000 lb/hr | 23,000 lb/hr | 5 minutes |
| s. High aqueous wastes feed rate to nozzle 992-IN-001 of the burner kiln | 16 gpm | N/A | N/A |
| t. High aqueous wastes feed rate to nozzle 992-IN-002 of the burner kiln | 16 gpm | N/A | N/A |
| u. High aqueous wastes feed rate to nozzle 992-IN-003 of the burner kiln | 16 gpm | N/A | N/A |
| v. High gaseous waste feed rate to burner kiln | 420 lb/hr | 400 lb/hr | 5 minutes |
| w. High energetic liquid wastes feed rate to burner 993-BN-003 of the SCC | 5,200 lb/hr | 5,000 lb/hr | 5 minutes |
| x. High energetic liquid wastes feed rate to burner 993-BN-004 of the SCC | 5,200 lb/hr | 5,000 lb/hr | 5 minutes |
| y. High total aqueous wastes feed rate to SCC | 15,000 lb/hr | 14,285 lb/hr | 5 minutes |
| z. High aqueous wastes feed rate to nozzle 993-IN-001 of the SCC | 7.5 gpm | N/A | N/A |
| aa. High aqueous wastes feed rate to nozzle 993-IN-002 of the SCC | 7.5 gpm | N/A | N/A |

| PARAMETER | IMMEDIATE CUTOFF LIMIT | DELAYED CUTOFF LIMIT | DELAY PERIOD |
|---|---|---|---|
| bb. High aqueous wastes feed rate to nozzle 993-IN-003 of the SCC | 7.5 gpm | N/A | N/A |
| cc. High aqueous wastes feed rate to nozzle 993-IN-004 of the SCC | 7.5 gpm | N/A | N/A |
| dd. Low atomizing fluid pressure to the primary kiln energetic liquid wastes for burner 991-BN-009 | 65 psig | N/A | N/A |
| ee. Low atomizing fluid pressure to the burner kiln energetic liquid wastes for burner 992-BN-010 | 50 psig | N/A | N/A |
| ff. Low atomizing fluid pressure to the SCC energetic liquid wastes for burner 993-BN-003 | 70 psig | N/A | N/A |
| gg. Low atomizing fluid pressure to the SCC energetic liquid wastes for burner 993-BN-004 | 70 psig | N/A | N/A |
| hh. High primary kiln pressure | N/A | -0.1 inches W.C. | 3 seconds |
| ii. High burner kiln pressure | N/A | -0.1 inches W.C. | 3 seconds |
| jj. High SCC pressure | N/A | -0.1 inches W.C. | 3 seconds |
| kk. Low pH of scrubber recirculating liquor | 3.0[5] | N/A | N/A |
| ll. Positive signal from any broken bag detector | N/A | positive signal | 60 seconds |
| mm. Low stoichiometric ratio of hydroxide (calcium or calcium and sodium) in the dry scrubber to chlorine in the feed | N/A | 1.25[6] | 5 minutes |
| nn. High gas temperature entering dry scrubber (either 996-TIR-291 or 996-TSHH-291 or both) | N/A | 750°F | 30 seconds |
| oo. High gas temperature entering baghouse (either 996-TIC-501 or 996-TSHH-259 or both) | 400°F | N/A | N/A |

| PARAMETER | IMMEDIATE CUTOFF LIMIT | DELAYED CUTOFF LIMIT | DELAY PERIOD |
|---|---|---|---|
| pp. High gas temperature exiting scrubber SO-007 (either 998-TE-903 or 998-TSHH-285 or both) | 180°F | N/A | N/A |
| qq. High gas temperature exiting scrubber SO-020 (either 998-TE-904 or 998-TSHH-518 or both) | 180°F | N/A | N/A |
| rr. Low recirculating liquor flow to scrubber SO-007 | N/A | 300 gpm | 5 minutes |
| ss. Low recirculating liquor flow to scrubber SO-020 | N/A | 300 gpm | 5 minutes |
| tt. Loss of ID fan | fan off | N/A | N/A |
| uu. Loss of flame on primary kiln burner 991-BN-009 | loss of flame | N/A | N/A |
| vv. Loss of flame on burner kiln burner 992-BN-010 | loss of flame | N/A | N/A |
| ww. Loss of flame on SCC burner 993-BN-003 | loss of flame | N/A | N/A |
| xx. Loss of flame on SCC burner 993-BN-004 | loss of flame | N/A | N/A |
| yy. Opening of thermal vent | vent open | N/A | N/A |
| zz. Reserved | | | |

1. 950°F during mini-burn testing and the trial burn period
2. 1300°F during mini-burn testing and the trial burn period
3. 1850°F during mini-burn testing and the trial burn period
4. 10,000 lb/hr during mini-burn testing and the trial burn period
5. pH of 2.3 during mini-burn testing and the trial burn period
6. stoichiometric ratio of 1.0 during mini-burn testng and the trial burn period

IX(B).G.2. The Permittee shall comply with Condition IX(A).G.2.

IX(B).G.3. Reserved

IX(B).G.4. The Permittee shall test the emergency waste feed cutoff system and associated alarms at least every 168 operating hours. This test shall demonstrate that all setpoints in Condition IX(B).G.1. will trigger the appropriate waste feed cutoff. During each test at least one of the setpoints shall demonstrate an actual waste feed cutoff. The

value signalling this cutoff may be simulated. The test of the remaining setpoints may be simulated (i.e. an actual cutoff need not be performed). Records documenting these tests and results obtained shall be maintained in the operating record.

**IX.(B).H. RECORDKEEPING**

IX(B).H.1. The Permittee shall record and maintain in the operating record for this permit, all monitoring, maintenance, recording, calibration, test, and inspection data compiled under the requirements of this permit.

IX(B).H.1.a The Permittee shall maintain a separate maintenance log book for the instruments/monitors required in this Module. The log book shall contain all work, maintenance, calibration, testing, and inspection data as required for each instrument. Records for each instrument/monitor shall be maintained separately within the logbook.

IX(B).H.1.b. In addition to recording the 24-hour rolling average feed rates and the one hour block average feed rates for each of the carcinogenic metals (arsenic, beryllium, cadmium, chromium), the Permittee shall also record the one-minute averages used to calculate each one hour block average. In addition to recording the hourly rolling average feed rates for each of the non-carcinogenic metals (antimony, barium, lead, mercury, nickel, selenium, silver, thallium), the Permittee shall also record the one-minute averages used to calculate each hourly rolling average. These data shall be maintained in the operating record in accordance with Condition II.M.

IX(B).H.1.c. In addition to recording the 60 minute rolling average feed rate for bulk solids to the primary kiln, bulk solids to the burner kiln, and sludge to the burner kiln, the Permittee shall also record the one-minute averages used to calculate each hourly rolling average. These data shall be maintained in the operating record in accordance with Condition II.M.

IX(B).H.2. The Permittee shall record in a separate log book as part of the operating record for this permit, the date and time of all automatic waste feed cut-offs, including the triggering parameters, reason for the cut-off, and corrective action taken. The Permittee shall also record all failures of the automatic waste feed cut-off system to function properly and corrective actions taken.

**IX(B).I.** **TRIAL BURN PERIOD**

The trial burn period shall be that time between shakedown and the post-trial burn period when the incinerator is tested for compliance with the required performance standards.

**IX(B).J.** **CONFORMITY TO TRIAL BURN PLAN**

The Permittee shall operate and monitor the incinerator during the trial burn phase as specified in the Trial Burn Plan and QA Plan, Permit Attachment 17.

**IX(B).K.** **WASTE FEED LIMITATIONS DURING TRIAL BURN**

During the trial burn period, the following shall not be fed to the incinerator:

Pyrophoric wastes/materials
Radioactive wastes/materials
Water reactive wastes/materials
DOT Forbidden, Class A, and Class B explosives
Shock sensitive wastes/materials
RCRA hazardous waste Nos. F020 through F023, F026 and F027.

**IX(B).L.** **TRIAL BURN POHCs**

The principal organic hazardous constituents (POHCs) for which DREs shall be determined are:

1,2,4-trichlorobenzene
hexachloroethane
polychlorinated biphenyls
toluene

**IX(B).M.** **TRIAL BURN DETERMINATIONS**

During the trial burn (or as soon after the trial burn as practical), the Permittee shall make the determinations required by R450-3-12(b)(2)(vi)(A)-(J) and compute stack emission rates for Arsenic, Beryllium, Cadmium, Chromium, Lead, and Mercury.

**IX(B).N. TRIAL BURN SUBMISSIONS AND CERTIFICATIONS**

The Permittee shall submit to the Executive Secretary the results of the determinations required by Condition IX(B).M., along with a copy of all data collected during the trial burn, within ninety (90) days of completion of the trial burn. All submissions must be certified in accordance with R450-3-3.3.

**IX(B).O. POST-TRIAL BURN PERIOD**

During the post-trial burn period (the period starting immediately following completion of the trial burn and ending when the final operating permit is effective), and for the minimum period sufficient for the Permittee to analyze samples, compute data, and submit trial burn results, and for the Executive Secretary to review the trial burn results and make any modifications necessary to the permit, the Permittee shall comply with the following conditions.

**IX(B).P. LIMITATIONS ON WASTE FEED DURING POST-TRIAL BURN**

IX(B).P.1. During the post-trial burn period, the Permittee may feed only the wastes described in Condition IX(B).C.1. to the incinerator.

IX(B).P.2. During the post-trial burn period, the Permittee shall comply with Conditions IX(B).C.2. through IX(B).C.19. and Conditions IX(B).C.21. through IX(B).C.23. with the exception of Conditions IX(B).C.6., IX(B).C.10., and IX(B).C.11. where the 60 minute rolling average limit shall have no delay.

IX(B).P.3. No hazardous waste shall be fed to the incinerator unless the Permittee complies with the operating conditions specified under Condition IX(B).Q.

IX(B).P.4. The Permittee shall comply with the following metals limitations.

IX(B).P.4.a. The Permittee shall control metal emissions from the stack such that the rate of emissions for each metal is no greater than the maximum allowable emission rate specified herein:

| Metal | Maximum Emission rate (lb/hr) |
|---|---|
| Antimony | 17.01 |
| Arsenic | 0.0448 |
| Barium | 300.00 |
| Beryllium | 0.0024 |
| Cadmium | 0.0787 |
| Chromium (VI) | 0.0189 |
| Lead | 5.10 |
| Mercury | 4.54 |
| Nickel | 300.00 |
| Selenium | 226.76 |
| Silver | 170.07 |
| Thallium | 17.01 |

IX(B).P.4.b. The Permittee shall not exceed the maximum metal feed rates to the incinerator as specified in Condition IX(B).C.20.b. unless the Permittee can clearly demonstrate that the emissions during the trial burn test are below those specified in Condition IX(B).P.4.a. This demonstration shall be accomplished by submitting to the Executive Secretary all metals feed and emission results from all runs of the trial burn as soon as practical after the trial burn. If after review, the Executive Secretary concurs with the results and provides written notice to the Permittee, the following alternate metals feed limitations may be implemented for the remainder of the post-trial burn period. These alternate metals feed limitations shall be 75% of the maximum feed rate of each metal demonstrated during the trial burn and shall be those specified in the notice to the Permittee. If these alternate metals feed rate limitations are implemented, the Permittee shall conduct stack sampling and analysis at least every thirty days to demonstrate continued compliance with Condition IX(B).P.4.a. The results of these tests shall be provided to the Executive Secretary. After evaluating these data, the Executive Secretary may reduce the testing frequency.

The feed rates for arsenic, beryllium, cadmium, and chromium shall be calculated on a 24-hour rolling average basis as provided in 40 CFR § 266.102(e)(6)(ii). None of the hourly average feed rates used in calculating the 24-hour rolling average for arsenic, beryllium, cadmium, and chromium shall, at any time, exceed ten times the allowable feed rate specified above. The feed

rates for antimony, barium, lead, mercury, nickel, selenium, silver, and thallium shall be calculated on an hourly rolling average basis as provided in 40 CFR § 266.102(e)(6)(i)(B). Compliance with the metals feed limitations shall be demonstrated through waste analysis of the incinerator feed as required by Condition II.D.

**IX(B).Q. OPERATING REQUIREMENTS DURING POST-TRIAL BURN**

During the post-trial burn period, the Permittee shall feed the wastes described in Condition IX(B).P. to the primary kiln, burner kiln and secondary combustion chamber only when complying with Conditions IX(B).D.1. through IX(B).D.15.

**IX(B).R. INSPECTION REQUIREMENTS DURING POST-TRIAL BURN**

During the post-trial burn period, the Permittee shall comply with Condition IX(B).E.

**IX(B).S. MONITORING REQUIREMENTS DURING POST-TRIAL BURN**

During the post-trial burn period, the Permittee shall comply with Condition IX(B).F.

**IX(B).T. WASTE FEED CUT-OFF REQUIREMENTS DURING POST-TRIAL BURN**

During the post-trial burn period, the Permittee shall comply with Condition IX(B).G. with the exception of Conditions IX(B).G.1.j., IX(B).G.1.o., and IX(B).G.1.p. where instead of a five minute delay associated with the 60 minute rolling average, an immediate waste feed cutoff shall occur.

**IX(B).U. RECORDKEEPING DURING POST-TRIAL BURN**

During the post-trial burn period, the Permittee shall comply with Condition IX(B).H.

**IX(B).V. REPORTING NON-COMPLIANCE DURING THE TRIAL BURN**

If, based upon the analytical results of the trial burn and before submitting the required trial burn results, the Permittee determines that the incinerator failed in any of the runs to achieve any of the performance standards specified in Condition IX(A).B., the Permittee shall notify the Executive Secretary within twenty-four (24) hours of making the determination. This notification shall include a description of the failure along with the probable causes. The Permittee may submit with this notification justification showing that the Permittee can operate the incinerator through the balance of the trial burn period and/or post-trial burn in compliance with the performance standards of this permit. Upon request of the Executive Secretary, the Permittee shall cease feeding hazardous waste to the incinerator. In making this request, the Executive Secretary will take into account the nature of the failure and the likelihood of the ability to specify alternate post-trial burn permit conditions that would ensure that the performance standards will be met. If the Executive Secretary determines that alternate post-trial burn permit conditions are necessary to ensure that the performance standards will be met, the Executive Secretary will modify the post-trial burn permit conditions accordingly. If the Executive Secretary determines that the Permittee must cease operation, the Permittee may apply to the Executive Secretary for a permit modification in accordance with Condition I.D.5. and, if necessary, a new trial burn pursuant to R315-3-20(b).